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REMARKS

The following remarks are submitted to address the issues raised in the Office Action mailed February 5, 2003.

Claims 1-8, 10-17, 27-32, and 41-50 are currently pending in the application, claims 9, 18-26, and 33-40 having been cancelled without prejudice, and claims 41-50 having been added by the foregoing amendment. Claims 8-9, 18, 19, and 32 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which applicant regards as the invention. Claims 1-3, 5-7, and 27 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,637,341 to Switall (hereinafter "Switall"). Claims 1-3, 5-7, and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,192,252 to Paul (hereinafter "Paul") in view of Switall. Claims 3 and 4 stand alternatively rejected under 35 U.S.C. § 103(a) as being unpatentable over Switall as applied to claim 1 or alternatively over Paul and Switall as applied above, and further in view of U.S. Patent No. 5,405,443 to Akimoto et al. (hereinafter "Akimoto"). Claims 8 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paul and Switall as applied to claim 1 and 27 above, and further in view of U.S. Patent No. 3,920,431 to Reese (hereinafter "Reese"). Claims 10-13, 15, 17-19, 28, 30, 31, and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paul, Switall, and Reese as applied to claims 8, 9, and 27, and further in view of U.S. Patent No. 3,848,565 to Schweppe (hereinafter "Schweppe"). Claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Paul, Switall, Reese, and Schweppe as applied to claim 10, and further in view of U.S. Patent No. 3,401,542 to Evans (hereinafter "Evans"). Claim 16 stands rejected

under 35 U.S.C. § 103(a) as being unpatentable over Paul, Switall, Reese, and Schweppe as applied to claim 15, and further in view of U.S. Patent No. 4,192,663 to Schmandt (hereinafter “Schmandt”). Claims 20 and 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Switall as applied to claim 18 or alternatively over Paul, Switall, Reese, and Schweppe as applied to claims 18 or 28 above, and further in view of Akimoto. Claims 28, 30, and 31 are alternatively rejected under 35 U.S.C. § 103(a) as being unpatentable over Switall as applied to claim 27, and further in view of Schweppe. Claim 29 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Switall and Schweppe as applied to claim 28, and further in view of Akimoto. Claims 21-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paul and Reese. Claim 33 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Switall and Schweppe.

Applicants have cancelled claims 9, 18-26, and 33-40 without prejudice to their introduction in a continuation application and/or divisional application. Accordingly, Applicants have not addressed the Examiner’s rejection of these claims. Applicants’ failure to comment on or otherwise traverse the Examiner’s rejection of the cancelled claims should not be viewed as Applicants’ agreement with the Examiner’s grounds for rejection, or as a surrender of the subject matter claimed in the cancelled claims.

Applicants respectfully request consideration of the application in view of the foregoing amendments and the following remarks.

Election

Applicants hereby affirm their provisional election of Group I, Claims 1-33, for further prosecution in this application with traverse. Applicants have cancelled claims 34-40 without prejudice to their introduction in a divisional application.

This election is made with traverse on the grounds that it would not be unduly burdensome for the Examiner to conduct a search on all the claims. In searching for prior art related to applicators for applying at least a partial coating of a solution to a filament and to systems for supplying and applying at least a partial coating of a solution to a filament, the Examiner will also likely locate prior art related to methods of supplying and applying at least a partial coating of a solution to a filament. Thus, Applicants submit that the search and examination of the entire application could be made without serious burden. See MPEP § 803, in which it is stated that “[i]f the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions.”

Claims 8-9, 18-19, and 32 - 35 U.S.C. § 112, 2nd paragraph

Claims 8-9, 18-19, and 32 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants have cancelled claims 18-19 without prejudice to their introduction in a continuation application.

Applicants have amended claim 8 to clarify that the solution level refers to the solution level of the first reservoir in each of those claims. Applicants have amended claim

32 to specify that the solution level refers to the solution level of the local reservoir and to correct a typographical error (“levels” instead of “level”). Applicants have also amended claim 31 to correct an error (“local reservoir” instead of “first reservoir”).

In view of the foregoing, Applicants respectfully request that the rejection of these claims under 35 U.S.C. § 112, second paragraph, be withdrawn.

Dependent Claims

In responding to the claim rejections below, Applicants submit that the dependent claims are patentable based on their dependency from independent claims, which Applicants argue are patentable. Thus, in many instances, Applicants have not provided separate remarks specifically directed to the Examiner’s grounds for rejecting the dependent claims. Applicants’ failure to comment on or otherwise traverse the Examiner’s rejection of the dependent claims should not be viewed as agreement, on the part of the Applicants, with the Examiner’s grounds for rejection.

Claims 1-3, 5-7, and 27 - 35 U.S.C. § 102(b)

The rejection of claims 1-3, 5-7, and 27 under 35 U.S.C. § 102(b) as being anticipated by Switall is respectfully traversed.

The present application is directed to applicators for applying at least a partial coating of a solution to a filament and to systems for supplying and applying at least a partial coating of a solution to a filament. Embodiments of the present invention provide systems, methods, and devices for applying an at least partial coating of a solution of a known composition to

passing filaments, while eliminating the need to collect and recirculate excess solution, preventing the solution from overflowing the applicator reservoir and becoming wasted, and shielding the solution in the reservoir from contamination.

Applicants have amended claim 1 to better clarify this embodiment of their invention. In particular, Applicants have amended claim 1 to better clarify that the solution is in reservoirs sufficiently separate for the solution in the second reservoir to not be subject to the potential splashing and surface irregularities due to the applicator surface moving through the solution. The second reservoir has a solution level indicative of the solution level of the solution in the first reservoir. The detector determines the solution level within the second reservoir and is operable to control an adjustment of the volume of the solution in the first reservoir. Amended claim 1 of the present invention is directed to an applicator for applying at least a partial coating of a solution to a filament that comprises an applicator surface operable to at least partially coat a filament with a solution; a first reservoir operable to supply the solution to the applicator surface, a volume of the solution in the first reservoir corresponding to a solution level in the first reservoir; a second reservoir operable to contain a supply of solution in fluid communication with the solution in the first reservoir such that the solution in the second reservoir has a solution level indicative of the solution level of the solution in the first reservoir; and a detector for determining the solution level within the second reservoir, the detector operable to control an adjustment of the volume of the solution in the first reservoir. Applicants have amended claims depending from claim 1 to make them consistent with amended claim 1.

Switall is directed to an apparatus for applying an aqueous silicone emulsion to a paper web as the web is moving through a printing press.¹ Switall utilizes applicator rollers 12,14 to apply a silicone emulsion from holding trays 24,26.² The silicone emulsion is mixed and transferred to the holding trays 24,26 from a mixing tank 22.³ A low level sensor 58 and a high level sensor 60 are provided in the mixing tank 22 to sense the level in the mixing tank 22.⁴ The flow rate of silicone emulsion delivered to the holding trays 24,26 is regulated by flow regulators with respect to the flow rate of silicone emulsion through intake ends 56a,56b of a return pipe 56, so that the emulsion level in the holding trays will remain constant without danger of the silicone emulsion overflowing the trays.⁵ The intake ends 56a,56b of the return pipe in Switall control the levels of the silicone emulsion in the holding trays 24,26. For example, if there is too much silicone emulsion in one of the trays, the silicone emulsion automatically leaves the tray via the intake end of the return pipe.

Applicants respectfully submit that Switall does not teach or suggest “a second reservoir operable to contain a supply of solution in fluid communication with the solution in the first reservoir such that the solution in the second reservoir has a solution level indicative of the solution level of the solution in the first reservoir” as recited in claim 1. The second reservoir provides a separate zone for more accurately detecting the solution level of the solution in the first reservoir. This separate zone allows the solution level to be determined using a detector without the splashing and other surface irregularities that may be present in

¹ Switall, col. 1, ll. 6-9.

² *See id.*, col. 2, ll. 25-28 and ll. 35-40.

³ *See id.*, col. 2, ll. 33-35.

⁴ *See id.*, col. 3, ll. 52-55.

⁵ *See id.*, col. 4, ll. 31-37,

the first reservoir which result, in part, from the motion of the applicator surface through the solution in the first reservoir.⁶

The Examiner asserted that a holding tray 24 of Switall corresponded to a first container and that the mixing tank 22 corresponded to a second container. However, contrary to the Examiner's position, the mixing tank 22 is not operable to contain a supply of solution in fluid communication with the solution in the holding tray 24 such that the solution in the mixing tank 22 has a solution level indicative of the solution level in the holding tray 24. In particular, the solution level in the mixing tank 22 is not indicative of the solution level in the holding tray 24. For example, silicone emulsion could continuously be supplied from the mixing tank 22 to the holding tray 24, such that the holding tray 24 remains full (e.g., the level of silicone emulsion in the holding tray 24 is at or just below the intake end 56a of the return pipe 56 at all times) as the level of silicone emulsion in the mixing tank 22 steadily decreases. In such a situation, the level of silicone emulsion in the holding tray 24 remains constant while the level of silicone emulsion in the mixing tank 22 decreases. In this regard, the silicone emulsion level in the mixing tank 22 is not indicative of the silicone emulsion level in the holding tray 24. For at least this reason, Applicants respectfully submit that claim 1 is patentable over Switall.

Applicants also respectfully traverse the rejection of claim 1 based on Switall because Switall does not teach or suggest "a detector for determining the solution level within the second reservoir, the detector operable to control an adjustment of the volume of the solution in the first reservoir" as recited in claim 1. Switall uses a low level sensor and a high level

⁶ See Spec., p. 13, ll. 1-8.

sensor in its mixing tank 22.⁷ When the low level sensor senses a low level of liquid in the mixing tank 22, a signal is delivered to a control console which starts the transferring and delivery cycles of water and silicone concentrate to begin making a new batch of silicone emulsion.⁸ The sensors in the mixing tank 22 of Switall are not operable to control an adjustment of the volume of the silicone emulsion in the tray 24; rather, the sensors in mixing tank 22 are operable to control an adjustment of the volume of silicone emulsion in the mixing tank 22 itself. Further, the low level and high level sensors of Switall are associated with the mixing tank 22 and are not indicative of the volume of silicone emulsion in the first tray 24.

In contrast, the detector as set forth in claim 1 of the present application is "operable to control an adjustment of the volume of the solution in the first reservoir." For example, solution may be added to the first reservoir based on the detected solution level in the second reservoir. However, as set forth in Switall, the flow rate of silicone emulsion delivered to the trays is regulated by the flow regulators with respect to the flow rate through intake ends 56a and 56b of a return pipe 56.⁹ In other words, the amount of silicone emulsion added to a tray in Switall is dependent on the amount of silicone emulsion removed from the tray via the return pipe, and is not dependent on the amount of silicone emulsion in the mixing tank. For at least this additional reason, Applicants respectfully submit that claim 1 is patentable over Switall.

For at least the separate and independent reason that Switall does not teach or suggest a second reservoir operable to contain a supply of solution in fluid communication with the

⁷ See *id.*, col. 3, ll. 53-57.

⁸ See *id.*, col. 3, l. 59 to col. 4, l. 31.

⁹ See *id.*, col. 4, ll. 31-37

solution in the first reservoir such that the solution in the second reservoir has a solution level indicative of the solution level of the solution in the first reservoir, Applicants respectfully submit that claim 1 is patentable over Switall. For at least the separate and independent reason that Switall does not teach or suggest a detector for determining the solution level within the second reservoir, the detector operable to control an adjustment of the volume of the solution in the first reservoir, Applicants respectfully submit that claim 1 is patentable over Switall. As claims 2-3 and 5-7, and 13 depend from claim 1 or an intervening dependent claim, Applicants likewise respectfully submit that these claims are also patentable.

Applicants also traverse the rejection of claim 5 because Switall does not teach or suggest a detector as claimed that "is operable to generate a signal to the flow controller to control the flow of the solution to the first reservoir." The low level sensor 58 and the high level sensor 60 in the mixing tank 22 of Switall are not operable to generate a signal to a flow controller to control the flow of the solution to a holding tray; rather, the sensors in mixing tank 22 are operable to control the flow of silicone concentrate and water to the mixing tank 22 itself to prepare silicone emulsion. As set forth in Switall, the flow rate of silicone emulsion delivered to the trays is regulated by the flow regulators with respect to the flow rate through intake ends 56a and 56b of a return pipe 56.¹⁰ In addition and as shown in FIG. 1 of Switall, the control console 62 is not connected to the flow regulator valves 52,54 that control the delivery of silicone emulsion to the holding trays 24,26. For at least this additional reason, Applicants respectfully submit that claim 5 is patentable over Switall.

¹⁰ See *id.*, col. 4, ll. 31-37

Applicants respectfully traverse the Examiner's characterization of Switall with regard to claim 6. Switall states that the intake ends 56a and 56b "permit[] the gravitational return of the silicone emulsion from the holding trays 24 and 26 when the level of the silicone emulsion reaches the level of the intake ends 56a and 56b."¹¹ Thus, to the extent that Switall contains an overflow level, the overflow levels in the holding trays 24 and 26 would correspond to the heights of the intake ends 56a and 56b of the return pipe 56. The Examiner asserts that "the sensor levels 60 and 58 can be the range of levels below the overflow level (note that the pipe entrances 56a and 56b lead to pipe 56, which empties into container 22 above the sensors 60 and 58)."¹² However, the sensor levels 60 and 58 correspond to the amount of silicone emulsion in the mixing tank 22. As set forth above, Applicants respectfully submit that the silicone emulsion level in the mixing tank 22 is not indicative of the silicone emulsion level in the holding tray 24. Applicants therefore submit that Switall does not teach or suggest a first reservoir that includes an overflow level and a predetermined range of levels below the overflow level.

Further, Switall does not control the level of silicone emulsion within a predetermined range of levels below an overflow level. Switall relies on the intake ends 56a, 56b of the return pipe 56 to control the upper limit of silicone emulsion in the tray, and is not able to control the level of silicone emulsion in trays below the intake ends of the return pipe (i.e., the level is either above the intake end or not). In contrast, Applicants' invention does not rely on the overflow level to maintain the solution level in the first reservoir within the predetermined range of levels. For at least the additional reason that Switall does not teach

¹¹ Switall, col. 3, ll. 44-49.

¹² Office Action, mailed February 5, 2003, p. 6.

or suggest a first reservoir that includes an overflow level and a predetermined range of levels below the overflow level, Applicants respectfully submit that claim 1 is patentable.

Applicants have amended claim 27 to better clarify this embodiment of their invention. In particular, Applicants have amended claim 27 to better clarify that the solution is in reservoirs sufficiently separate for the solution in the auxiliary reservoir to not be subject to the potential splashing and surface irregularities due to the applicator surface moving through the solution in the local reservoir. The auxiliary reservoir has a solution level indicative of the solution level of the solution in the local reservoir. The detector monitors the solution level within the auxiliary reservoir and is operable to generate a signal to the flow controller in response to the monitored solution level of the auxiliary reservoir such that the solution level in the local reservoir is maintained within a predetermined range of levels.

Amended claim 27 of the present invention is directed to a system for supplying and applying at least a partial coating of a solution to a filament that comprises: a main container operable to supply a solution; a local reservoir in fluid communication with the main container for receiving the solution from the main container, a volume of the solution in the local reservoir corresponding to a solution level in the local reservoir; an applicator surface operable to receive the solution from the local reservoir and apply an at least partial coating of the solution to the filament; an auxiliary reservoir operable to contain a supply of solution in fluid communication with the solution in the local reservoir such that the solution in the auxiliary reservoir has a solution level indicative of the solution level of the solution in the local reservoir; a flow controller positionable between the main container and the local

reservoir to control a flow of solution from the main container to the local reservoir; and a detector for monitoring the solution level within the auxiliary reservoir, wherein the detector is operable to generate a signal to the flow controller in response to the monitored solution level of the auxiliary reservoir. Applicants have amended claims depending from claim 27 to make them consistent with amended claim 27.

Applicants respectfully traverse the rejection of claim 27 based on Switall because Switall does not teach or suggest “an auxiliary reservoir operable to contain a supply of solution in fluid communication with the solution in the local reservoir such that the solution in the auxiliary reservoir has a solution level indicative of the solution level of the solution in the local reservoir.” The auxiliary reservoir provides a separate zone for more accurately detecting the solution level of the solution in the local reservoir. This separate zone allows the solution level to be determined using a detector without the splashing and other surface irregularities that may be present in the local reservoir which result, in part, from the motion of the applicator surface through the solution in the local reservoir.¹³

The Examiner asserts that the mixing tank 22 of Switall is “operable to contain a supply of solution in fluid communication with the solution in the [local] container such that the solution has a level indicative of the solution level in the [local] container.”¹⁴ However, contrary to the Examiner’s position, the mixing tank 22 is not operable to contain a supply of solution in fluid communication with the solution in the holding tray 24 such that the solution in the mixing tank 22 has a solution level indicative of the solution level in the holding tray 24. In particular, the solution level in the mixing tank 22 is not indicative of the

¹³ See Spec., p. 13, ll. 1-8.

¹⁴ Office Action, mailed February 5, 2003, p. 6. Applicants note that claim 27 refers to a “local” container and not a “first” container.

solution level in the holding tray 24. For example, silicone emulsion could continuously be supplied from the mixing tank 22 to the holding tray 24, such that the holding tray 24 remains full (e.g., the level of silicone emulsion in the holding tray 24 is at or just below the intake end 56a of the return pipe 56 at all times) as the level of silicone emulsion in the mixing tank 22 steadily decreases. In such a situation, the level of silicone emulsion in the holding tray 24 remains constant while the level of silicone emulsion in the mixing tank 22 decreases. In this regard, the silicone emulsion level in the mixing tank 22 is not indicative of the silicone emulsion level in the holding tray 24. For at least this reason, Applicants respectfully submit that that claim 27 is patentable over Switall.

Applicants also respectfully submit that claim 27 is patentable over Switall because Switall does not teach or suggest “a detector for monitoring the solution level within the auxiliary reservoir, wherein the detector is operable to generate a signal to the flow controller in response to the monitored solution level of the auxiliary reservoir.” The Examiner asserts that the level sensors 58,60 in Switall are “operable to generate a signal to the flow controller (via control console 62) in response to the monitored solution level of the auxiliary container such that the solution level in the local container is maintained within a predetermined range of levels (as defined by sensors 58 and 60).”¹⁵ Applicants respectfully disagree with this characterization of Switall. The sensors in the mixing tank 22 of Switall are not operable to generate a signal to a flow controller in response to a monitored solution level within the holding trays.. Rather, the sensors in mixing tank 22 are operable to control an adjustment of the volume of silicone emulsion in the mixing tank 22 itself. The low level and high level

¹⁵ Office Action, mailed February 5, 2003, p. 7.

sensors of Switall are not indicative of the volume of silicone emulsion in the first tray 24.

In addition and as shown in FIG. 1 of Switall, the control console 62 is not connected to the flow regulator valves 52,54 that control the delivery of silicone emulsion to the holding trays 24,26.

In contrast, the detector as set forth in claim 27 of the present application is “operable to generate a signal to the flow controller in response to the monitored solution level of the auxiliary reservoir.” For example, solution may be added to the local reservoir based on the detected solution level in the auxiliary reservoir. However, as set forth in Switall, the flow rate of silicone emulsion delivered to the trays is regulated by the flow regulators with respect to the flow rate through intake ends 56a and 56b of a return pipe 56.¹⁶ In other words, the amount of silicone emulsion added to a tray in Switall is dependent on the amount of silicone emulsion removed from the tray and is not dependent on the amount of silicone emulsion in the mixing tank. For at least this additional and independent reason, Applicants respectfully submit that claim 27 is patentable over Switall.

For all of the foregoing reasons, claims 1-3, 5-7, and 27 are not taught or suggested by Switall and the Examiner is respectfully requested to withdraw the rejection.

Claims 1-3, 5-7, and 27 - 35 U.S.C. § 103(a)

The rejection of claims 1-3, 5-7, and 27 under 35 U.S.C. § 103(a) as being unpatentable over Paul in view of Switall is respectfully traversed.

¹⁶ See *id.*, col. 4, ll. 31-37

Paul relates to an apparatus for applying liquid to advancing filaments that includes a pair of nestable containers.¹⁷ The outer or second container 50 is adapted to slideably receive the first container 22 and to capture the excess liquid from first container 22 and any spray thrown from the filaments or the like deposited on a front wall of the first container 22.¹⁸

With regard to claim 1, the Examiner correctly points out that Paul “does not disclose a second container or detector as claimed.”¹⁹ Likewise, Paul also does not disclose a second reservoir or detector as presently claimed. The Examiner then cites Switall as curing these deficiencies in Paul. However, in the previous section, Applicants demonstrated that Switall fails to teach or suggest a second reservoir or detector as claimed. In particular, nothing in Switall teaches or suggests a second reservoir operable to contain a supply of solution in fluid communication with the solution in the first reservoir such that the solution in the second reservoir has a solution level indicative of the solution level of the solution in the first reservoir. Switall also does not teach or suggest a detector for determining the solution level within the second reservoir and operable to control an adjustment of the volume of the solution in the first reservoir. In order to conserve space, Applicants will not re-state their position regarding Switall, but instead refer the Examiner to the above discussion.²⁰

Applicants do note and again traverse the Examiner’s statement that the solution level in the second container of Switall (the mixing tank 22) is indicative of the solution level in the first containers (the holding trays 24,26). Applicants also respectfully submit that the Examiner’s assertion that “the detector [in Switall is] operable to control an adjustment of the volume of

¹⁷ See Paul, Abstract.

¹⁸ See *id.*, col. 2, ll. 40-45.

¹⁹ Office Action, mailed February 5, 2003, p. 8.

²⁰ Applicants also refer the Examiner to their above traversals of the rejections of claims 5-6.

the solution in first container such that the solution level in the first container is maintained within a predetermined range of levels” is incorrect.²¹ As noted above, the volume of the silicone emulsion in the holding trays of Switall is not adjusted based on the solution level of silicone emulsion in the mixing tank. As stated in the previous section, Applicants respectfully submit that this incorrectly describes Switall.

Accordingly, Applicants respectfully submit that neither Paul nor Switall teach or suggest “a second reservoir operable to contain a supply of solution in fluid communication with the solution in the first reservoir such that the solution in the second reservoir has a solution level indicative of the solution level of the solution in the first reservoir” as recited in claim 1. Applicants also respectfully submit that both Paul and Switall fail to teach and/or suggest “a detector for determining the solution level within the second reservoir, the detector operable to control an adjustment of the volume of the solution in the first reservoir” as claimed in claim 1. For each of these independent reasons, Applicants respectfully submit that claim 1 is patentable over Paul in view of Switall. As claims 2-3 and 5-7, and 13 depend from claim 1 or an intervening dependent claim, Applicants likewise respectfully submit that these claims are also patentable.

With regard to claim 27, Paul fails to teach or suggest a number of features set forth in claim 27, including features which are also not taught or suggested in Switall. In the previous section, Applicants demonstrated that Switall does not teach or suggest (1) “an auxiliary reservoir operable to contain a supply of solution in fluid communication with the solution in the local reservoir such that the solution in the auxiliary reservoir has a solution

²¹ Office Action, mailed February 5, 2003, p. 8.

level indicative of the solution level of the solution in the local reservoir” or (2) “a detector for monitoring the solution level within the auxiliary reservoir, wherein the detector is operable to generate a signal to the flow controller in response to the monitored solution level of the auxiliary reservoir.” Paul also does not teach these elements as claimed. Accordingly, Applicants respectfully submit that claim 27 is patentable over Paul in view of Switall.

Claims 3 and 4 - 35 U.S.C. § 103(a)

The rejection of claims 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Switall as applied to claim 1 or alternatively over Paul in view of Switall, and further in view of Akimoto is respectfully traversed.

Applicants have previously set demonstrated that claim 1 is patentable over Switall. Because claims 3 and 4 depend from claim 1, Applicants likewise submit that claims 3 and 4 are also patentable over Switall taken individually.

Akimoto relates to a device for coating semiconductor wafers with resist solution. Akimoto uses an optical sensor outside of a resist bottle to detect the top level of resist solution in the bottle.²²

Claims 3 and 4 depend from claim 1. Applicants have previously demonstrated that claim 1 is patentable over Switall and over Paul in view of Switall. The Examiner cites Akimoto as “disclos[ing] that it is known to use an optical detector . . . for monitoring the level of a solution in a coating apparatus.”²³ However, Akimoto fails to otherwise cure the

²² Akimoto, col. 4, ll. 39-41.

²³ Office Action, mailed February 5, 2003, p. 12.

deficiencies of Paul and Switall. Therefore, Applicants respectfully submit that claim 1 is patentable over Paul in view of Switall and Akimoto. As claims 3 and 4 depend from claim 1, Applicants likewise respectfully submit that these claims are also patentable.

As noted above, Applicants' invention allows for the accurate measurement of a solution level in the first reservoir by providing a separate zone with a solution level that is indicative of the solution level in the first reservoir. The detector may be positioned in this zone to determine the solution level without the splashing and other surface irregularities that may be present in the zone having applicator surface. This feature allows for certain detectors (e.g., non-surface contacting detectors) to be used, which can provide a very accurate determination of solution level. Such features are not taught or suggested by the references cited by the Examiner.

Claims 8 and 9 - 35 U.S.C. § 103(a)

The rejection of claims 8 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Paul and Switall as applied to claim 1 and claim 27 above, and further in view of Reese is respectfully traversed. Applicants have cancelled claim 9 without prejudice to its introduction in a continuation application.

Reese relates to a binder applicator that includes a housing containing a sump or reservoir for a binder or size solution, at least a pair of rolls having an endless belt constructed and arranged to ride over the surface of the rolls.²⁴ A slot is positioned in the back wall of the housing to permit the free passage of ambient air entering the front of the

²⁴ Reese, col. 1, ll. 63-67.

housing through the applicator housing and out at a point of removed from the front opening.²⁵

Applicants have previously set forth the deficiencies of Paul and Switall with regard to claim 1. Reese fails to cure these deficiencies. Because claim 8 depends from claim 1, Applicants respectfully submit that claim 8 is patentable over Paul in view of Switall and Reese.

Claims 10-13, 15, 17-19, 28, 30, 31, and 32 - 35 U.S.C. § 103(a)

The rejection of claims 10-13, 15, 17-19, 28, 30, 31, and 32 under 35 U.S.C. § 103(a) as being unpatentable over Paul, Switall, and Reese as applied to claims 8, 9, and 27, and further in view of Schweppe is respectfully traversed. Applicants have cancelled claims 18-19 without prejudice to their introduction in a continuation application.

Schweppe relates to a binder applicator for applying liquid binder to textile fibers.²⁶ The binder applicator of Schweppe provides an applicator surface which is concave in shape.²⁷ A housing for the applicator roll is provided with an inlet and outlet for continuous feed of solutions to the applicator roll.²⁸ The housing is provided with an aperture or port through which the roll protrudes so that it can be contacted by the textile fiber or strand to be coated.²⁹

Applicants have previously set forth the deficiencies of Paul, Switall, and Reese with regard to claim 1. Schweppe also fails to cure these deficiencies as it fails to teach or suggest

²⁵ *Id.*, col. 2, ll. 7-12.

²⁶ *See* Schweppe, Abstract.

²⁷ *See id.*, col. 1, ll. 54-55.

²⁸ *See id.*, col. 1, ll. 64-66.

²⁹ *See id.*, col. 2, ll. 35-37.

a second reservoir or a detector as claimed. Accordingly, Applicants respectfully submit that claim 1 is patentable over Paul in view of Switall, Reese and Schweppe. Because claims 10-13, 15, and 17 depend from claim 1 or an intervening dependent claim, Applicants also respectfully submit that claims 10-13, 15, and 17 are patentable over Paul in view of Switall, Reese and Schweppe.

Applicants have previously set forth the deficiencies of Paul and Switall with regard to claim 27. Both Reese and Schweppe also fail to cure these deficiencies. Accordingly, Applicants respectfully submit that claim 27 is patentable over Paul in view of Switall, Reese, and Schweppe. Because claims 28, 30, 31, and 32 depend from claim 27 or an intervening dependent claim, Applicants also respectfully submit that claims 28, 30, 31, and 32 are patentable over Paul in view of Switall, Reese and Schweppe.

Claim 14 - 35 U.S.C. § 103(a)

The rejection of claim 14 under 35 U.S.C. § 103(a) as being unpatentable over Paul, Switall, Reese, and Schweppe as applied to claim 10, and further in view of Evans is respectfully traversed.

Evans relates to a yarn dyeing apparatus that comprises a roller 11 mounted for rotation about a horizontal axis and defining a moving yarn support surface, a plurality of dye-stuff receiving formations 12, dyestuff applicator means 13, yarn guide means 20, and a nip roller 15 in contact with the roller 11.³⁰ The nip roller 15 is a ground roller, and a doctor blade 16 bears against the surface thereof, such blade removing from the nip roller 15 any

³⁰ See Evans, col. 1, ll. 62-70.

dyestuff picked up from the yarn or from the roller 11 and passing the dyestuff to a reservoir 17.³¹

Applicants have previously set forth the deficiencies of Paul, Switall, Reese, and Schweppe with regard to claim 1. Evans also fails to cure these deficiencies as it fails to teach or suggest a second reservoir or a detector as claimed. Accordingly, Applicants respectfully submit that claim 1 is patentable over Paul in view of Switall, Reese, Schweppe, and Evans. Because claim 14 depends from claim 1 or an intervening dependent claim, Applicants also respectfully submit that claims 14 is patentable over Paul in view of Switall, Reese, Schweppe, and Evans.

Claim 16 - 35 U.S.C. § 103(a)

The rejection of claim 16 under 35 U.S.C. § 103(a) as being unpatentable over Paul, Switall, Reese, and Schweppe as applied to claim 15, and further in view of Schmandt is respectfully traversed.

Schmandt relates to a movable applicator system for applying a size and/or binder to advancing glass filaments. The apparatus of Schmandt may include a trough 180 along the upper front edge of the frame immediately adjacent the filaments but not in contact therewith when the applicator assembly is in the production position to collect and drain away any water or foreign matter that might collect at that portion of the frame.³² The apparatus of Schmandt may also include a movable cover 176, which is adapted to move the filaments away from the applicator surface such that the sizer binder is not transferred to the advancing

³¹ See *id.*, col. 2, ll. 28-32.

³² See Schmandt, col. 4, ll. 26-32.

filaments.³³ The movable cover 176, when in the open or primary product position, is adapted to direct a portion of the entrained air moving along with the advancing filaments along downwardly and away from the filaments in a smooth continuous manner to reduce the amount of air washing over the region of the applicator surface in contact with the advancing filaments and to provide a degree of protection for the applicator assembly.³⁴

Applicants have previously set forth the deficiencies of Paul, Switall, Reese, and Schweppe with regard to claim 1. Schmandt also fails to cure these deficiencies as it fails to teach or suggest a second reservoir or a detector as claimed. Accordingly, Applicants respectfully submit that claim 1 is patentable over Paul in view of Switall, Reese, Schweppe, and Schmandt. Because claim 16 depends from claim 1 or an intervening dependent claim, Applicants also respectfully submit that claims 16 is patentable over Paul in view of Switall, Reese, Schweppe, and Schmandt.

Claims 20 and 29 - 35 U.S.C. § 103(a)

The rejection of claims 20 and 29 under 35 U.S.C. § 103(a) as being unpatentable over Paul, Switall, Reese, and Schweppe as applied to claim 18 or 28, and further in view of Akimoto is respectfully traversed. Applicants have cancelled claim 20 with prejudice to its introduction in a continuation application.

Claim 29 depends from claims 27 and 28. Applicants have previously set forth reasons why claims 27 and 28 are patentable over Paul in view of Switall, Reese, and Schweppe. Akimoto fails to cure the deficiencies of these references. Accordingly,

³³ See *id.*, col. 4, ll. 35-43.

³⁴ See *id.*, col. 4, ll. 54-62.

Applicants respectfully submit that claim 29 is patentable over Paul in view of Switall, Reese, Schweppe, and Schmandt.

Claims 28, 30, and 31 - 35 U.S.C. § 103(a)

The rejection of claims 28, 30, and 31 under 35 U.S.C. § 103(a) as being unpatentable over Switall as applied to claim 27, and further in view of Schweppe is respectfully traversed.

With regard to the application of Switall to claim 27, Applicants have previously set forth that Switall fails to teach or suggest “an auxiliary reservoir operable to contain a supply of solution in fluid communication with the solution in the local reservoir such that the solution in the auxiliary reservoir has a solution level indicative of the solution level of the solution in the local reservoir.” Applicants have also previously set forth that Switall fails to teach or suggest “a detector for monitoring the solution level within the auxiliary reservoir, wherein the detector is operable to generate a signal to the flow controller in response to the monitored solution level of the auxiliary reservoir.” For each of these reasons, Applicants have respectfully submitted that claim 27 is patentable over Switall.

Schweppe also does not teach or suggest these features of Applicants’ invention and, therefore, does not cure the deficiencies of Switall. Thus, claim 27 is patentable over Switall in view of Schweppe. Because claims 28, 30, and 31 depend from claim 27 or an intervening dependent claim and because claim 27 is patentable over Switall in view of Schweppe, Applicants likewise submit that claims 28, 30, and 31 are patentable.

Claim 29 - 35 U.S.C. § 103(a)

The rejection of claim 29 under 35 U.S.C. § 103(a) as being unpatentable over Switall and Schweppe as applied to claim 28, and further in view of Akimoto is respectfully traversed.

Applicants have previously discussed the patentability of claims 27 and 28 over Switall in view of Schweppe. Akimoto does not cure the deficiencies of Switall and Schweppe for reasons set forth above. Therefore, Applicants also respectfully submit that claims 27 and 28 are patentable over Switall in view of Schweppe and Akimoto. Because claim 29 depends from claims 27 and 28, Applicants likewise respectfully submit that claim 29 is patentable.

Claims 21-26 - 35 U.S.C. § 103(a)

The rejection of claims 21-26 under 35 U.S.C. § 103(a) as being unpatentable over Paul and Reese is respectfully traversed. Applicants have cancelled claims 21-26 without prejudice to their introduction in a continuation application.

Claim 33 - 35 U.S.C. § 103(a)

The rejection of claim 33 under 35 U.S.C. § 103(a) as being unpatentable over Switall and Schweppe is respectfully traversed. Applicants have cancelled claim 33 without prejudice to its introduction in a continuation application.

New Claims

Applicants have added new claims 41-49. Support for these claims can be found throughout the specification and particularly at pages 12-18, in the Figures, and in the claims as originally filed.

Claims 41 and 42 depend from claims 1 and 27, respectively. Applicants have previously set forth why claims 1 and 27 are patentable and, accordingly, submit that claims 41 and 42 are likewise patentable.

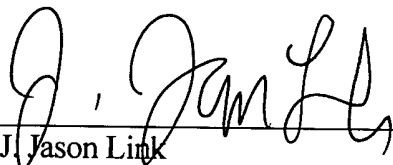
New independent claim 43 is directed to an applicator for applying at least a partial coating of a solution to a filament that comprises an applicator surface operable to at least partially coat a filament with a solution; a first volume of solution having a top surface corresponding to a solution level of the first volume, the first volume of the solution in communication with at least a portion of the applicator surface; a second volume of the solution having a top surface corresponding to a solution level of the second volume and separate from the top surface of the first volume, the solution level of the second volume being indicative of the solution level of the first volume; and a detector for determining the solution level of the second volume of the solution, the detector operable to control an adjustment of the first volume of the solution. Applicants respectfully submit that claim 43 is patentable. New claims 44-50 depend from claim 43 Applicants respectfully submit that new dependent claims 44-50 are likewise patentable as they depend from claim 43.

CONCLUSION

For the foregoing reasons, a favorable Office Action is respectfully solicited. The Examiner is respectfully invited to contact J. Jason Link at 336.607.7443 or Charles W. Calkins at 336.607.7315 to discuss any matter relating to this application.

Respectfully submitted,

Date: June 5, 2003


J. Jason Link
Attorney for Applicants
Registration No. 44,874

KILPATRICK STOCKTON LLP
1001 West Fourth Street
Winston-Salem, NC 27101-2400
(336) 607-7443 Telephone
(336) 607-7500 Facsimile